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Occurence of *Baloghobates nudus* HAMMER, 1967, in Japan

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Synopsis

SUZUKI, Keiichi (5-88 Senju, Adachi-ku, Tokyo): Occurence of *Baloghobates nudus* HAMMER, 1967, in Japan. *Acta Arachnol.*, **26**: 69-78 (1975).

Baloghobates nudus was described by HAMMER (1967) from New Zealand and has never reported from any other country. The author had a chance to obtain a large nnmber of the species collected on living trees in Japan.

In this paper the author describes the species in detail, examining many features not mentioned in the original description.

In June of 1974 the author received a small glass tube which was sent by Mr. Hidenori OHKUBO, Entomology Laboratory, The Mié University. The small glass tube was filled with black and large oribatid mites.

A close examination of these mites revealed it to be *Baloghbates nudus* which was described by HAMMER (1967) from New Zealand. She collected it from green foliage. In the case of Mr. OHKUBO, he also separated it from the living trees, *Quercus phillyraeoides* A. GRAT, and told the author "the mite is never collected from ground soils".

From the above-mentioned facts, the author thinks *B. nudus* is an arboreal species. In the present paper, only the morphological features are described. A detail study on ecology of the Japanese *B. nudus* will be published by Mr. Hidenori OHKUBO.

Locality.—Sakasa-gawa shrine, Tsu City, Mié-ken, Central Japan, 17-XI-1972, from living *Quercus phillyaeoides* A. GRAT; leg. H. OHKUBO.

Material.—132 females and 2 males; only the females are described here.

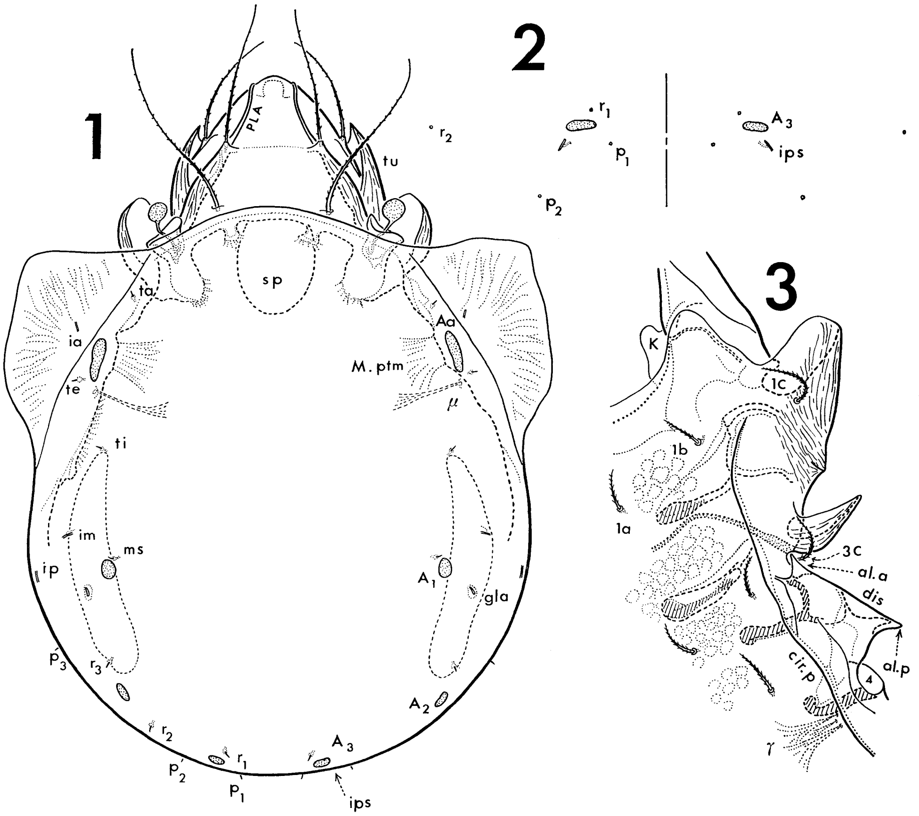
Measurement.—Length: 670 (748) 795 μ; width: 475 (520) 570 μ. Relative length: $ro \doteqdot la$; $in > la > ro$; $in = 2(LA\text{-}LA)$; $ex > la\text{-}la$; $2G < ag\text{-}ag$; $2G \doteqdot G\text{-}AN$.

Habitus and colour.—The species is a large ceratozetid mite. The greatest width of the hysterosoma occurs at the middle along its length. Opisthosoma and epiprosoma have a reticulate sculpture. Colour of body and legs is blackwish brown.

Cerotegument.—When studied it in a dry condition, on a carbon block, the cerotegument appears to be granular and whitish on the lateral sides of podosoma. Concentration of cerotegument is found on the upper side of pedotectum I and its adjacent part including aspidosomal surface under pd_1.

Cuticle.—In transparent light the cuticle appears to be finely and densely punctate and becomes thin in an oval part near the anterior margin of notogaster (*sp* in Fig. 1). Tutorium, pedotectum I and pedotectum II striated. Femural cuticle of each leg has irregular longitudinal wrinkles: the wrinkles exist only on the antiaxial side in *FI* and *FIII*, while in *FII* and *FIV* the striae can be found on the paraxial side, too.

Gnathosoma.—Ventral surface of the infracapitulum diarthry type. Pantelebasic rutellum *RU* broad and its anterior part well chitinized; the distal part forms two dents: the upper dent stauter than the lower one. Inner side of rutellum has a conspicuous brush-like projection *pe* or *bru* which is arranged obliquely (Fig. 6). MICHAEL's foramen of orifice of infracapitular gland very large and almost oval in shape. Manubrial areae porosae *po. mn* situated in a space between antiaxial manubrial fissure *αf* and anterior end of fused carina of gena *cog*. The carina *cog* well developed and chitinized; the postrior end of *cog* terminates in an angular projection. Genal setae *a* and *m* are present: the anterior seta *a* glabrous, while the median seta *m* has comparatively long barbs throughout its length. Lateral margin of mentum *mn* bordered by a well chitinized carina *coh*. In the posterior area of *mn* a weak carina *cbh* runs from the base of *coh* along the anterior margin of mentotectum *mnt*. The anterior end of *cbh* projects toward the terminal angle of the carina *cog*: both the ends form an articulation for the gena and the mentum (Fig. 6). A single tracheal tip, large and spherical in shape, attaches to the posterior margin of movable digit of the chelicera; the tip is a part of the anterior trachea of acetabulum I. The invasion of the trachea into chelicera also occurs in Nicoletiellidae and some other related families. Lateral lip *LL* comparatively large and rather slender. The apex never blunt, but not so sharp. The lateral lip has an adoral sclerite *sc. ad*. The basal part of *sc. ad* wide, but suddenly narrowed at about 1/3 of its total length; the apex of the sclerite just reaches the level of the insertion pore of the anterior genal seta



Figs. 1–3 *Baloghobates nudus* HAMMER
1) Dorsal side. 2) Hind view of notogaster; middle line means median axis. 3) Pedotectal region.

a. Two adoral setae or_1 and or_2 are present: each seta simple and provided with minute ciliae densely (Fig. 7); the setae longer than half the length of the lateral lip *LL*. Labrum *LS* normal, triangular and lacking in minute spines on the distal part such as found in *Hermannia convexa*. There is a capitular apodema *ap. c* which is thin and consits of two wide extentions. Internal rib of dorsal infracapitular wall *ne* just reahces the plane of the posterior border of *ap. c*. Palpal chaetotaxy: (0-2-1-3-9); eupathidiotaxy: (0-0-0-0-4). Tarsal chaetotaxy shows typical ceratozetid form (Fig. 5): the apical three eupathidia, $su\zeta$, $ul'\zeta$ and $ul''\zeta$, can be recognized distinctly. Each eupathidion inserted on a small apophyse; they are of the same shape and length. There is a "*double horn*": solenidion ω and the anterocluminal eupathdion $acm\zeta$ associated with each other (*AcmS*). The solenidion and the eupathidion situated on an apophyse. Cluminal seta *cm* takes ordinal shape and has minute ciliae as on lateral setae l' and l''. Ventral setae have also such ciliae. Lateral setae (l) gentley curved anteriorly. Surface of femur, genu and tibia wrinkled longitudinaly. Ventral surface of the femur has a weak carina ★. A minute laterocoxal spine *e* found near the basal part of trochanter.

Aspidosoma.—A light spot can be found on rostrum. A part of rostral cuticle somewhat thin in contrast with the other parts, so that the part is recognized as a light spot (Figs. 1 and 10). Lamella *LA* narrow, but well developed. Just in front of the end of the lamella a pronounced carina, prolamella *PLA*, starts and extends to the border of the camerostome. At a meeting point of the prolamella and the border of the camerostome, a shallow notch *db* can be observed as in the genus *Mochlozetes* (Fig. 10 and 12). Translamella poorly developed. Tutorium *tu* well developed and has not minute tooth on its dorsal side (Fig. 10). The tip of *tu* terminates in a sharp point[1] as in Hammer's *nudus*. A long, distinct rostral seta *ro* located near the lateral margin of aspidosoma; the seta nearly equal in length to lamella. Lamellar seta *la* situated on a small lamellar cusp and has the barbs as rostral seta. Interlamellar seta is the longest among the aspidosomal setae; the setal length two times as long as the mutual distance of the lamellar setae. The bothridia never hidden by the anterior edge of the notogaster. The organ consists of typical four components,—*svm*, *svl*, *sdm* and *psdm*: *svl* and *svm* well developed and their lateral angles not sharp, but rounded. Sensillus has a short stem and a clavate head which is broadest distally. Exobothridial seta *ex* very long; longer than the mutual distance of the lamellar setae, and situated near the upper end of the pedotectum I pd_1; the seta can not be observed without removing of the tectum, because pd_1 covers *ex* wholly.

Lateral side of podosoma. — A relatively small, but stout genal process *d. gen* exists between pd_1 and *tu* along the lateral side of the camerostome *cam*. The tip of the process rather sharp and extends beyond the level of the insertion pore of *ro*. Pedotectum I large and ear-like, with many irregular striae as on lamella and tutorium. Pedotectum I almost equal in hight to the propodosoma. A single lamellar area porosa *Al* triangular, rotundo-angulated in shape, being situated below the basal part of *LA*. Discidium *dis* or *di* is usually a simple triangular projection, but in the present species the projection is trapezoid with two angles, *al. a* and *al. p* (Fig. 3 and 10).

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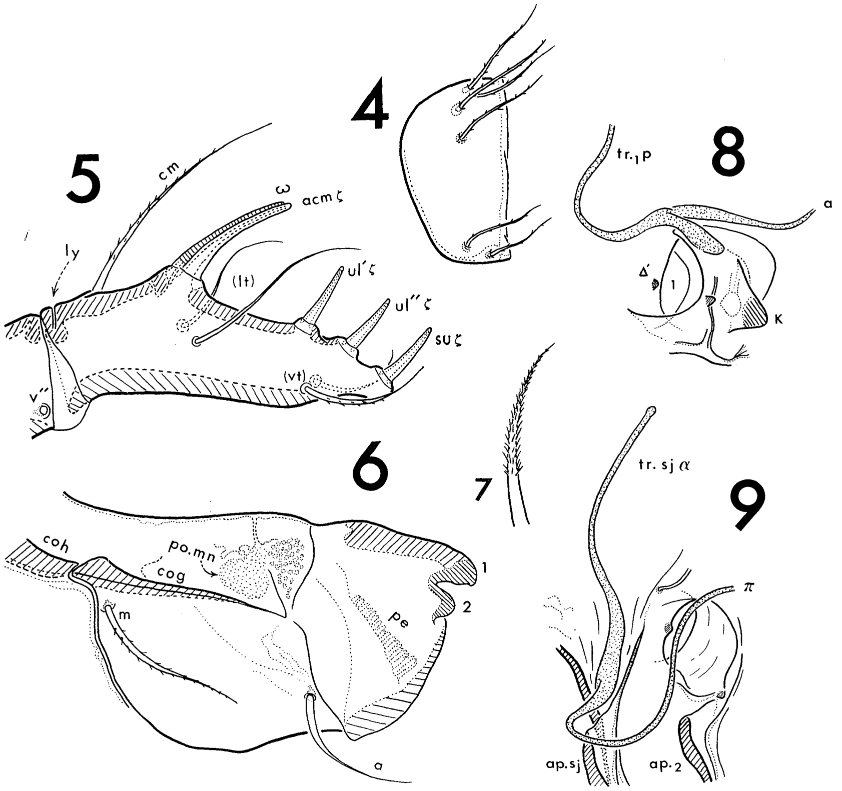
[1] Among 134 specimens examined, only one specimen has not a sharp tip, while the remaining 133 specimens have a sharp tip as in Hammer's *nudus*.



Figs. 4–9 *Baloghobates nudus* Hammer
4) Genital plate. 5) Tarsus of palp. 6) Gena and rutellum in lateral view. 7) Adoral seta or_1. 8) Internal view of acetabulum I. 9) The same view of acetabulum II and sejugal apodema.

Notogaster. — Notogaster almost oval in shape. The anterior margin of the tectum slightly arched. The pteromorpha *ptm* comparatively small in comparision with the large body size. The notogaster and *ptm* connected with a thin, flexible cuticle, so that *ptm* is movable using a larg, strong muscle *M. ptm* (Fig. 1). Many irregular striae or veins can be recognized on *ptm*. The notogaster provided with 10 pairs of very minute setae: *te* located near the posterior end of the area porosa *Aa*; *ms* situated just in front of the area porosa A_1; the posterior setae p_1, p_2 and p_3 found below the level of the posterior area porosa A_3 (Fig. 2). Notogastral lyrifissures *ia*, *im*, *ip* and *ips* are present: the anterior fissure *ia* opens on the ventral side of *ptm*; both *im* and *ip* located near area porosa A_1, while *ips* obliquley opens below the area porosa A_3. Areae porosae *Aa*, A_1, A_2 and A_3 distinct. Area porosa *Aa* is the largest and elongate, whilist the remaining areae porosae are almost oval. A pair of tendons μ attached to the notogaster just behind *Aa*. Orifice of lateroabdominal gland *gla* located behind A_1; its internal sack long and flat.

Coxisternal region. — The coxisternal chaetotaxy: (3-2-3-3). Each seta of the coxisterna has barbs. Seta *3c* inserted at the anterior basal part of the discidium *dis* or *di*, being the largest among the coxisternal setae. The apodemata I ap_1 well developed like *ap. sj.* A conspicous circumpedal carina *cir. p* runs from adjacent area of *Ac. IV* to the level of the setal insertion pore *1c*. There is no custodia *cus*.

Ano-genital region. — Genital plate has 6 setae with barbs (Fig. 4). Four among the setae inserted anteriorly, while the two remaining setae arranged at the posterior area. Several specimens has exceptionally 5 setae on the plate. Similar phenomenon occures in the case of aggenital setae²⁾. Preanal organ is *Mochlozetes*-type, but the frontal piece *FR* slightly small. The preanal peduncle *pc* slender and chitinized as *GD*. Anal plate has two ordinal setae. Adanal fissure *iad* located close to the lateral border of anal aperture, being situated at the level of adanal seta ad_3. The adanal setae ad_1, ad_2 and ad_3 are present: ad_1 and ad_2 arranged along the posterior margin of anal aperture.

Legs. — All the legs heterotridactyle. Chaetotaxy and solenidiotaxy of all the legs as follows:

a) Chaetotaxy

I (1-5-3-4-20); II (1-5-3-4-15); III (1-3-1-3-15); IV (1-2-2-3-11)

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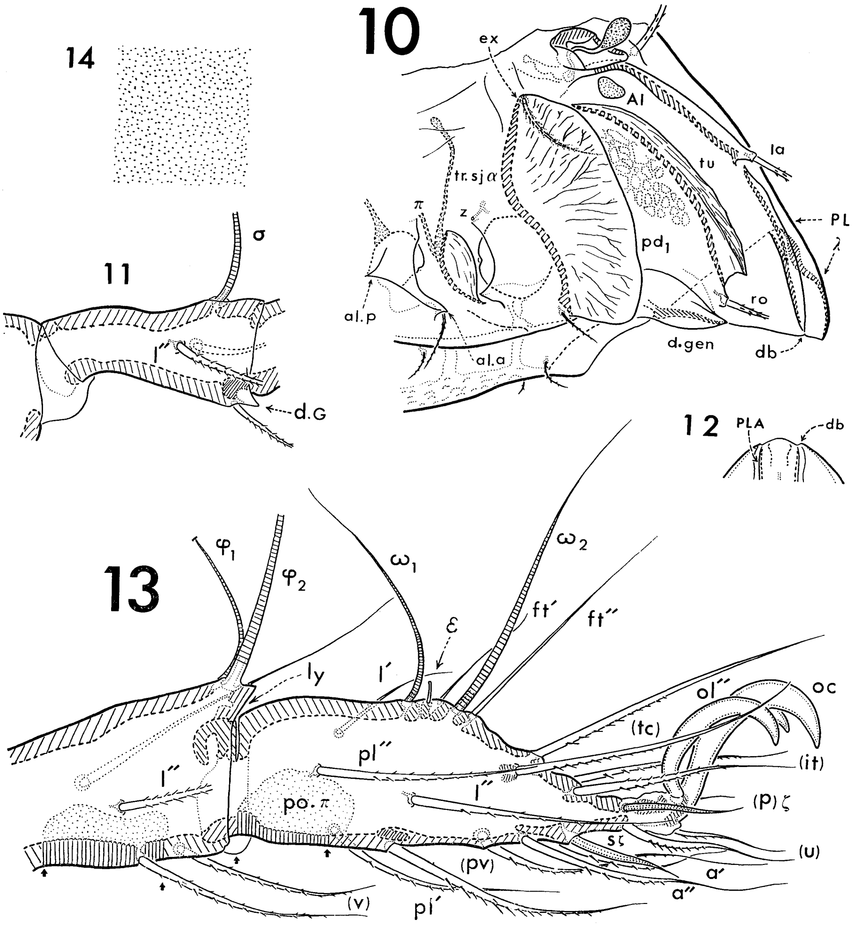
2) Two specimens among the 134 specimens examined have abnormal chaetotaxies: the ordinal aggenital chaetotaxy is 1-1 (each figure corresponds to the number of left and right aggenital setae) in the most of oribatids, but the two specimens examined show chaetotaxy 1-0. The shape and length of the setae in the abnormal specimens are similar to those of the normal ones.

b) Solenidiotaxy

I (0-0-1-2-2) ; II (0-0-1-1-2) ; III (0-0-1-1-0) ; IV (0-0-1-1-0)

Genu I has a prominent dent *d. G* on the antiaxial lateroinferior side (Fig. 11). Such a projection found also in *G II.* The lateral setae (*l*) of genu I thicker than the ventral seta *v′*. Tibial solenidion φ_1I and φ_2I long and filiform (Fig. 13) : φ_2 four times as long as φ_1 and thicker than φ_1. Solenidion



Figs. 10–14 *Baloghobates nudus* HAMMER
10) Lateral view of podosoma. 11) Lateral view of genu I.
12) Dorsal view of rostrum in crushed specimen.
13) Tarsus and tibia of leg I in lateral view.
14) Microsculpture of notogastral tectum.

φ_2I located on a tibial apophyse, but φ_1I without apophyse. Tarsus I has three eupathidia, $(p)\zeta$ and $s\zeta$, which are gently curved. Solenidion ω_1I and ω_2I both filiform, and subequal in length. A club-shaped famulus ε very minute and located between ω_1I and ω_2II. Lateral $l'I$ and $l''I$ are located in front of pl''. The fastigial seta $ft'I$ thin, much thinner than $ft'I$, and shorter than $ft''I$. Apotels rather thin: especially the two laterals ol' and ol'' thinner than the middle one *oc*. Femur, tibia and tarsus of leg I each has area porosa *po.* π; *po.* π found praraxially on femur, ventrally on tibia and ventroparaxially on trochanter. Extremities of areae porosae of ventral side are drawn using arrows in Fig. 13.

Antiaxial genual seta l'' II stronger and shorter than paraxial one l' II. Filiform solenidion φII straight, never curved; the solenidion about two times as long as ω_2II. Solenidion σII also filiform and somewhat shorter than φII. Tarsus has two solenidia: ω_1II equal in thickness and length to ω_2II. Tibial solenidion φII about two times as long as ω_2II. Areae porosae recognized on the paraxial side of femur, on the ventral side of tibia and on the ventroparaxial side of trochanter.

Femur III has 2 lateral setae (l). Trochanter III provided with 15 setae, but without solenidion; paired setae are (p), (it), (tc), (u), (a) and (pv), while unpaired setae are ft'' and s. Solenidion φIII filiform and much longer than tibia. A single, short solenidion σIII is present; it is slightly longer than 1/2 of l''III. Pedal areae porosae found on the paraxial side of *F*II, the ventral side of *T*III and the ventroantiaxial side of *TR*III.

Solenidion σIV filiform like the other solenidia and subequal in length to tibia. Pedal areae porosae simillar to those on leg III.

Tracheal system. — The system normal: $tr._1$ consists of two parts, $tr_1\ a$ and $tr_1\ p$ (Fig. 8). Anterior trachea $tr_1\ a$ extends into chelicera. Its tracheal end attached to the posterior margin of movable digit. Sejugal trachea also consists of two ducts, $tr.\ sj\alpha$ and $tr.\ sj\pi$ (Fig. 9): $tr.\ sj\alpha$ shorter than the latter, but has never $b.\ tr.\ sj$. Stigma of $tr.\ sj$ opens at the basal part of pedotectum II (Fig. 3, 8 and 10). Trachea III ordinally shaped and rather thicker than the above-mentioned tracheae.

ALPHABETIC LIST OF ABBREVIATIONS USED IN FIGS. 1-13

Aa, A_{1-3} : notogastral areae porosae.
Al : lamellar area porosa.
ap. c : capitular apodema.
b. tr. sj : brachytrachea of sejugal apodema.
cbh : posterior transversal carina of *mn*.
cog : fused carina of gena.
coh : lateral carina of *mn*.
d. gen : genal process.
di(=*dis*) : discidium.
FR : frontal piece of preanal organ.
GD : bowl-like lamella of preanal organ.
ia, *im*, *ip*, *ips* : hysterosomal lyrifissures.
LA : lamella.
LL : lateral lip.
LS : labrum.
mn : mentum.
mnt : mentotectum.
M. ptm : retractor muscle of pteromorpha.
ne : internal rib of dorsal infracapitular wall.
ol', ol'' : prolateral and retrolateral apotels.
oc : central apotel.
or_{1-2} : adoral setae 1-2.
pc : preanal peduncle which exists in most of ceratozetid mites.
pe(=*bru*) : brush-like projection of rutellum.
PLA : prolamella.
po. mn : manubrial area porosa.
po. π : paraxial area porosa of legs.
psdm : bothridial plate.
ptm : pteromorpha.
rp : rostrophragma.
RU : rutellum.
sc. ad : adoral sclerite.
sdm : bothridial plate.
sp : light spot of notogaster.
svl : bothridial plate.
svm : bothridial plate.
TLA : translamella.
tu : tutorium.
αf : antiaxial manubrial fissure.
ω : solenidion of tarsus.
φ : solenidion of tibia.

σ: solenidion of genu.
ζ: eupathidion.
μ: insertion spot of tendon.
★: paraxial carina of palpal femur.
′: prolateral (in general)
″: retrolateral (in general)

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摘　　要

鈴木恵一（東京都足立区千住 5-88）：バローコバネダニの日本からの新記録.

バローコバネダニ（新称）は Hammer (1967) によりニュージーランドから記載されたが，日本からは未記録であった。今回筆者は同定のために送られてきたダニが本種であることを確認できたので，原記載では触れられていなかった細部の形態学的特徴について報告する。